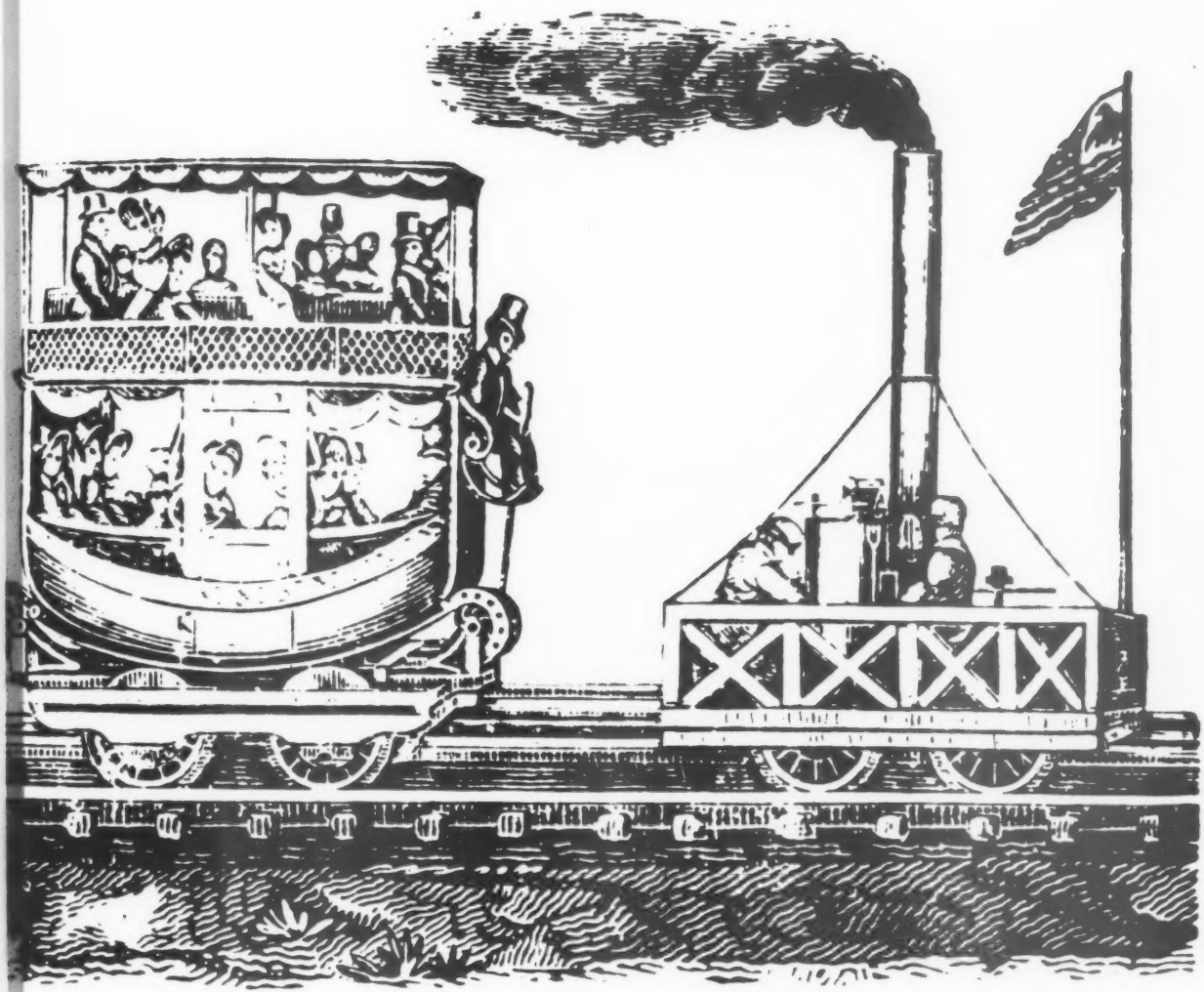
DECEMBER 1957 · 35c

# The Johns Hopkins Magazine



THE GLORY OF THE

# RAIL-ROAD.

# *"Christmas! Bah! Humbug!"*

The man in the wheel chair leaned into the microphone. "Christmas!" he snarled. "Bah! Humbug!" And, as they had in Christmases past, millions of young listeners chilled at the mental picture of the baleful Scrooge.

It was a Christmas institution, back in the Forties, this annual reading of Charles Dickens' classic. Its reader was something of an institution himself. In his turbulent lifetime he had been an unsuccessful painter but a good amateur second-baseman, a composer whose music was played by the New York Philharmonic, and a model for Frederick Remington.

To most people, though, he was Lionel Barrymore, the actor, and they loved him.

He was both crusty and kindly (he loved reading "A Christmas Carol"), adventurous, stubbornly independent in thought and outlook. And game as they come. Although an accident in 1936 imprisoned him in a wheel chair, he went resolutely on—working in motion pictures and making public appearances for nearly twenty years more.

No question but that Lionel Barrymore was one-of-a-kind. Yet the qualities so richly combined in him exist in a large measure among all the 170 million of us who call ourselves Americans.

They're why we are what we are, why our country is one of the strongest on earth. And why there is no wiser investment than an investment in America—through U. S. Savings Bonds, which guarantee the safety of your savings, up to any amount, and the rate of your return. Start buying Bonds today, through Payroll Savings or where you bank. And hold on to them!

**Now Savings Bonds are better than ever!** Every Series E Bond purchased since February 1, 1957, pays 3-¼% interest when held to maturity. It earns higher interest in the early years than ever before, and matures in only 8 years and 11 months. Hold your *old* E Bonds, too. They earn more as they get older.

PART OF EVERY AMERICAN'S SAVINGS BELONGS IN U.S. SAVINGS BONDS

# The Johns Hopkins Magazine

VOLUME IX December, 1957 NUMBER 3



*Editorial Committee*

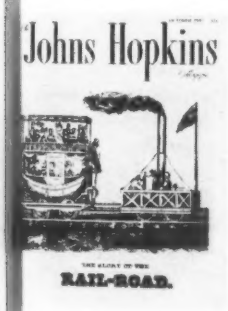
*

P. Stewart Macaulay
*Chairman*

Don Cameron Allen
Philip Bard
Eli Frank, Jr.
Palmer H. Futcher
Russell A. Nelson
Sidney Painter
Robert H. Roy
Thomas B. Turner
Benjamin H. Willier

Corbin Gwaltney
*Editor*

Richard Lidz
*Associate Editor*


**The Cover**

Not quite a century and a quarter have passed since the elegant train on this month's cover, equipped with its luxurious Imlay coaches, was chuffing along the tracks of the Newcastle and Frenchtown Rail-Road. A lot has happened in the field of transportation since then, but one thing that hasn't changed is the charm that a railroad train holds for a high proportion of the adult population. To those who belong to that group, we suggest turning to the article on page 6.

## *In This Issue*


**THE FIRST HOUR OF CHRISTMAS** ..... 4
Every December 25, at dawn, a group of nurses at the Johns Hopkins Hospital carry on a tradition that brings to patients who must spend the day away from home a bit of Christmas cheer.

**THE GLORY OF THE RAILROAD** ..... 6
Many were the problems that beset railroaders in the early days. But American inventors were ingenious. No solution was too radical or far-fetched for the pioneer designers of rolling stock.

**STORYBOOK LAND FOR A DAY** ..... 10
As the assembly ground for a department store's pre-Christmas children's parade, the Johns Hopkins University's campus at Homewood is bathed in a wonderful, fantastic air of make-believe.

**COINS: TREASURE TROVE OF HISTORY** ..... *Sarah E. Freeman* 14
There is far more to ancient coins than their value as curios or as precious metals. A collection such as the extensive one at Johns Hopkins yields much information about history and art.

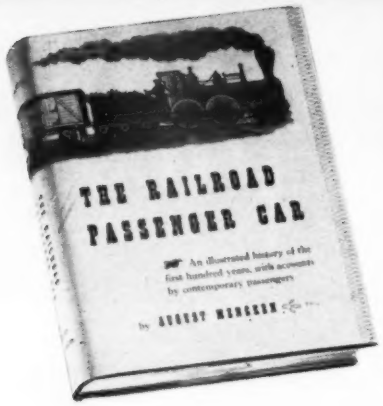
**EDITOR'S NOTES** ..... 2
**A JOHNS HOPKINS GAZETTE: NEWS AND NOTES** ..... 19
**EVENTS OF THE MONTH AT JOHNS HOPKINS** ..... Cover III



*Copyright 1957 by the Johns Hopkins University*



THE JOHNS HOPKINS MAGAZINE is published monthly from October to June inclusive by the Johns Hopkins University, Baltimore 18, Maryland. Subscription, $2.00 per year; single copies, 35 cents. Entered as second-class matter at the Post Office at Baltimore, Maryland, under the Act of March 3, 1879. EDITORIAL OFFICE: The Johns Hopkins University, Baltimore 18, Maryland. Notice of change of address should reach the magazine at least thirty days before the publication date of the issue with which it is to take effect. When ordering a change of address, please enclose your present address label or an exact copy of it.


THE RAILROAD
PASSENGER CAR
An illustrated history of the first hundred years, with accounts by contemporary passengers
by AUGUST MENCKEN

**THE RAILROAD PASSENGER CAR**

By AUGUST MENCKEN

- The only illustrated history of the first hundred years of American R. R. passenger service.
- Seventy-nine illustrations, including historical treasures.
- Thirty-five contemporary accounts, written by actual passengers from 1831 to 1891.
- Authentic descriptions of equipment, with scrupulous regard for detail and technical accuracy.

THE JOHNS HOPKINS PRESS
BALTIMORE 18, MARYLAND

---

The Johns Hopkins Bookstore
Homewood, Baltimore 18, Md.

Please send me ____ copies of "The Railroad Passenger Car," at $5 per copy, plus 15 cents per copy postage. (Add 2% sales tax if books are to be sent to address in Maryland.)

NAME.....

ADDRESS.....

CITY.....ZONE....STATE....

# EDITOR'S NOTES
## *AN INFORMAL REPORT*

THE time of year for tinsel and sleigh-bells is upon us, and this issue of The Johns Hopkins Magazine is full of reminders to that effect. Nowhere in our pages, however, is the traditional snow-covered-campus picture. Our supply of snow-covered-campus pictures is, we regret to report, exhausted.

Every year, when we flip our calendar to December, we pass the word to our photographers that *this* year, by George, we must obtain some new snow pictures. Whenever the skies turn leaden gray, our hopes rise. We provide ourselves with hourly weather reports. We murmur incantations. We keep overcoat and muffler at the ready and advise photographers to do the same.

But for several years running, we have acquired no new snow pictures.

A snow picture worthy of the name, we have concluded, is one of the hardest of all photographs to come by. For it to be taken in the first place, an almost impossible set of conditions must apply. The snow must be wet—the kind that clings handsomely to trees and roofs and shrubs. But it should also be dry—the kind that stays on roads and pathways no matter how heavy the traffic, refusing to turn to slush. It must be deep—the kind that the Johns Hopkins steam tunnels, which criss-cross the campus and emit heat at a great rate, cannot quickly melt.

The snowfall must be followed quickly by bright sunshine, in order to have those crisp shadow-patterns without which a snow picture is gray and dull. The sunshine, however, must not raise the temperature of the air appreciably and thus melt the snow. The wind must be right; otherwise soot will fall and mar the scene, which must be as white as . . . Well, as white as the driven snow.

It is merely sidestepping the issue to remind ourselves that, by not having any snow pictures in our files this Christmas, we avoid the risk of perjuring ourselves. It is a feeble attempt at rationalization for us to consult the Weather Bureau's records and find that, in fact, Baltimore (and hence Johns Hopkins) has had practically no white Christmases within the memory of man—and thus we are being scrupulously honest by not publishing white-Christmas photographs this month.

No. This year, by George, we *must* get some new snow pictures.

Speaking of pictures and impossible conditions, we recently received an invitation to enter a photographic contest sponsored by a college directory firm. After reading the rules, we decided that we'd better pass this one up. "Entrants," one rule stated, "must be mailed to . . . ."

From snow pictures to summertime labor difficulties is quite a jump, but we ask you to leap with us. We have just received a note from a reader who came across an item about this University in the daily newspaper published in Vevey, Switzerland (pop. 12,598). This is how the citizens of Vevey heard about Johns Hopkins, and we hope they don't have too contemptuous a feeling toward us as a result:

Les trente chasseurs de lucioles de l'Université John [sic] Hopkins se sont mis en grève. Ils réclament un meilleur salaire et de meilleures conditions de travail.

Les lucioles sont utilisées par les laboratoires de l'Université, qui s'efforcent de découvrir le secret de ces insectes nocturnes, qui peuvent "produire" de la lumière sans jamais se consumer.

Les chasseurs de lucioles sont payés suivant le poids de leurs prises. Il faut environ 33 lucioles pour faire un gramme et un gramme est payé 8 cents (environ 35 centimes). Les grévistes réclament 10 cents.

A member of the Johns Hopkins faculty reports that his wife, who sometimes takes on extra projects in order to beef up the family income, has been hired by an encyclopedia publisher (whom nobody has ever heard of) to do

a little job for him. Her assignment is to write up all the subjects beginning with the letter E, and ever since she accepted it, life in her household has been Edifying, Endeed.

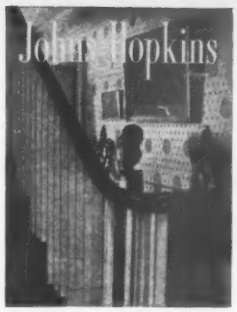
One evening, our informant tells us, the dinner-table conversation dealt with Eels. Another evening, it was Eltekon. Once our man tried talking about Fair Trade Laws and got nowhere. First time he paused to get his breath, his wife quickly changed the subject to Earache.

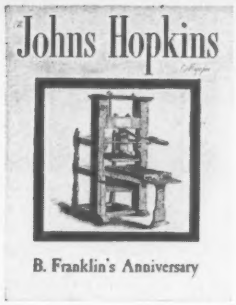
Fortunately for everybody, a scheme hatched by the husband can't be carried out, but he consoles himself by dreaming about it. He wants to throw a party when his wife reaches Ezra and sends the results of her labors off to the publisher. He will invite all the other writers of the encyclopedia: the expert on A, the expert on B, and so forth. Nobody, he is sure, will be able to talk to anybody else. Blessed silence should ensue.

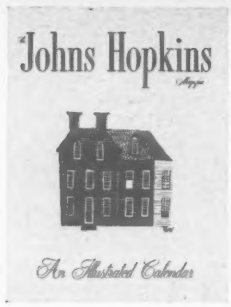
Collecting is an unshakable habit. As curator of the fine arts collection at Johns Hopkins, Sarah E. Freeman is well aware of this fact. "Eventually," she said in a note accompanying her article in this issue, "every collector, or his heirs, must face the problem of what to do with that case of stuffed birds or the boxes of buttons, arrowheads, Christmas cards, or stones stealthily removed from such hallowed spots as Mars Hill or the Roman Forum—where, they might be surprised to learn, the supply of souvenirs is just as stealthily replenished with chips from a local quarry. Or the problem may involve fine porcelains, etchings, jades, firearms, textiles, stamps, or coins. In many cases the University is a logical beneficiary; in others, we suspect that giving collections to Alma Mater is simply a case of passing the buck, perhaps when the wife of a collector has laid down an ultimatum that those cartons of old matchbooks in the attic simply *must* be got rid of before the next housecleaning.

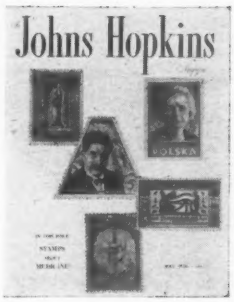
"As curator, I am often asked about the contents of the collection and its possible uses. My assertion that the numismatic collection, the largest and most valuable division, is one in which the University should take great pride often results in skeptical silence, while the questioner obviously mulls over more pertinent uses for coins."

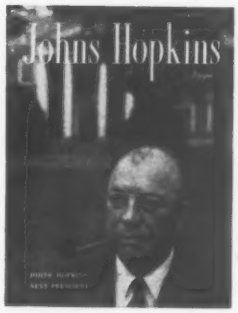
To such skeptics, Dr. Freeman's article in this issue should be a highly convincing reply.

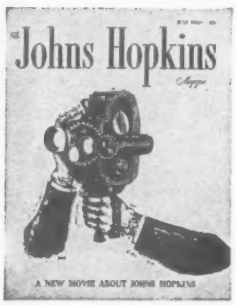


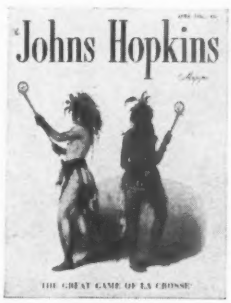



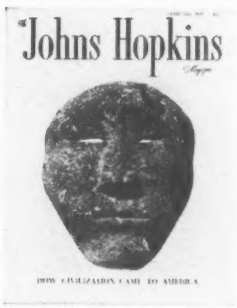



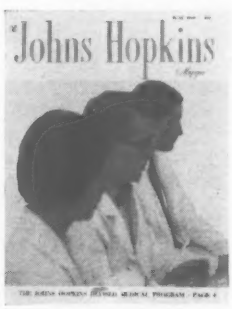





THE NEXT NINE ISSUES TWO DOLLARS

The Johns Hopkins Magazine
Baltimore 18, Maryland

☐ Payment is enclosed
☐ Bill me later

Please enter the following subscription to The Johns Hopkins Magazine for ☐ one year, $2; ☐ two years, $4

*Name* .....

*Address* .....

*City* ..... *Zone* .... *State* .....

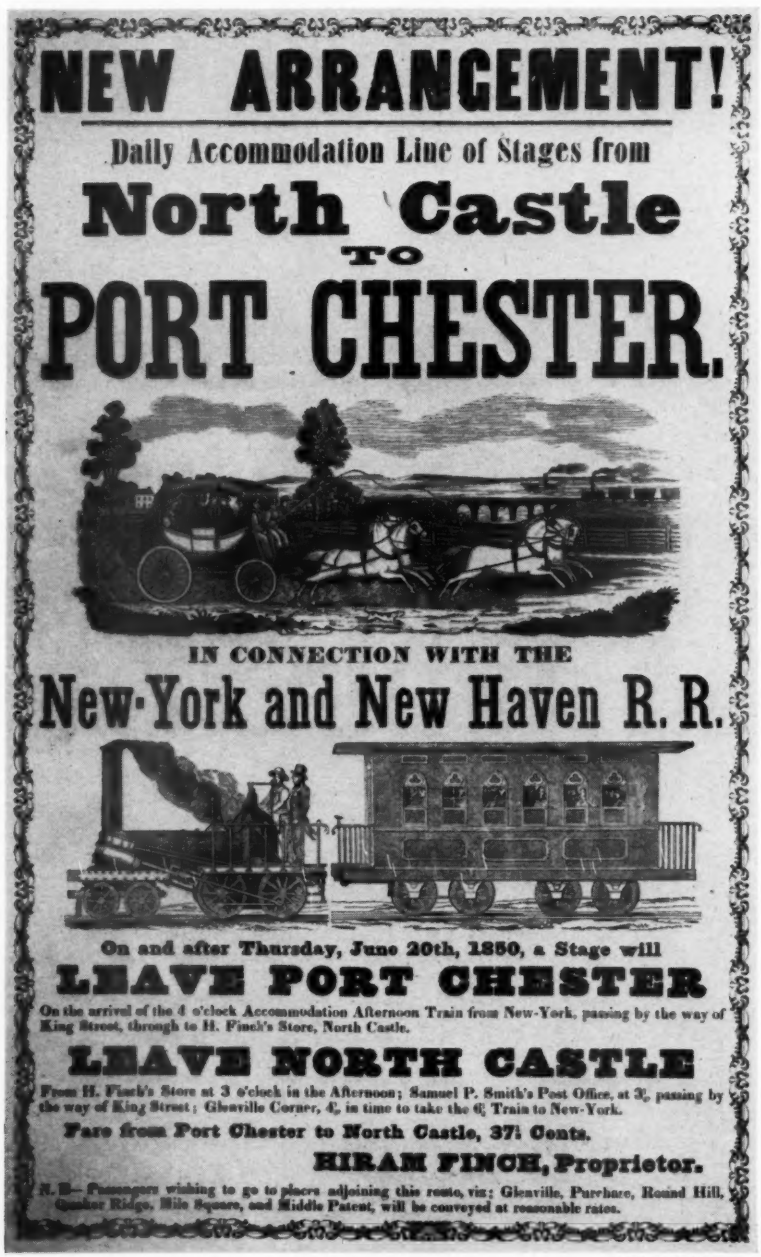
Caroling groups at the Hopkins Hospital hurry across a chilly porch, their figures blurred in the dim light of Christmas dawn.

# the first hour of Christmas

AT THE DAWN OF CHRISTMAS, this year as in many years before, nurses at the Johns Hopkins Hospital will carry on a warm tradition. Beginning beside the statue of Christ in the Hospital's rotunda, they will move through the wards and corridors, softly caroling. The Hospital will not be as full as usual; as many patients as possible will have been allowed to go home for the holiday. But to those who must remain, the sound of singing may bring a bit of the comfort and joy of Christmas day.

By AUGUST MENCKEN

# THE GLORY OF


NEW ARRANGEMENT!
Daily Accommodation Line of Stages from
North Castle
TO
PORT CHESTER.
IN CONNECTION WITH THE
New-York and New Haven R. R.
On and after Thursday, June 20th, 1850, a Stage will
LEAVE PORT CHESTER
On the arrival of the 4 o'clock Accommodation Afternoon Train from New-York, passing by the way of King Street, through to H. Finch's Store, North Castle.
LEAVE NORTH CASTLE
From H. Finch's Store at 3 o'clock in the Afternoon; Samuel P. Smith's Post Office, at 3¼, passing by the way of King Street; Glenville Corner, 4, in time to take the 6¾ Train to New-York.
Fare from Port Chester to North Castle, 37½ Cents.
HIRAM FINCH, Proprietor.
N. B.—Passengers wishing to go to places adjoining this route, viz: Glenville, Purchase, Round Hill, Quaker Ridge, Mile Square, and Middle Patent, will be conveyed at reasonable rates.

COLUMBIA UNIVERSITY

This article has been adapted from the book, *The Railroad Passenger Car, An Illustrated History of the First Hundred Years With Accounts by Contemporary Passengers*, by August Mencken. Published this fall by the Johns Hopkins Press ($5), it is believed to be the first railroad book that concentrates on the forgotten man—the railroad passenger. The book includes a description of the development of passenger cars from earliest times, thirty-five narratives of railroad travel by passengers of the times, and seventy-nine illustrations. Mr. Mencken is the author of *First Class Passenger* and *By the Neck: A Book of Hangings.*

# THE RAILROAD

## There wasn't any idea too daring or far-fetched for the men who designed trains and their rolling stock in the early days

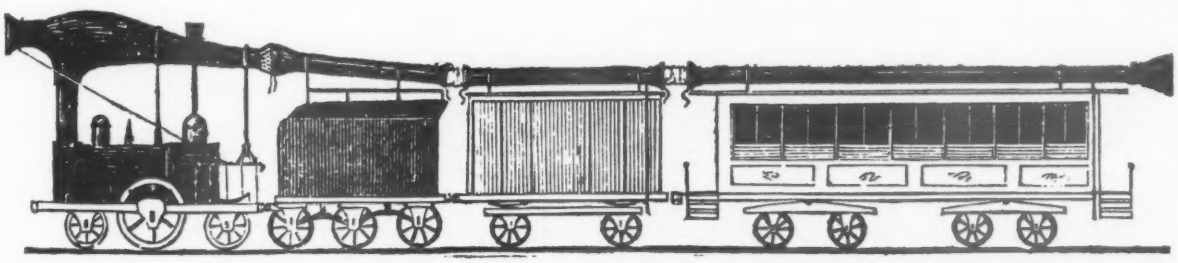
On a well-designed and well-maintained railroad a passenger riding in a modern car is hardly conscious of the roadbed under him. As far as he can tell from his seat, the train appears to be running on a perfectly straight and level track, and he can walk from end to end of the car with very little discomfort and no fear at all of bodily harm. This is the condition on every good railroad today, but there was a time when it was not to be found anywhere. Passengers in the last century were acutely aware of the roadbed. It jarred and jolted them incessantly, and not infrequently it maimed or killed them.

The sole concern of many of the early railroad-builders was to lay track as quickly as possible and as cheaply. Some of the roads were supervised by competent engineers and were built as well as could be done at the time, but many were slapped together by promoters who employed amateurish engineers on the work, with the result that the finished roads, with their sharp curves and bumpy grades, had the appearance of roller coasters stretching across country. The curves had a violent effect on the motion of the cars, and each change in grade produced a jolt, all of which, added up, made many of the passengers ill with train sickness.

Often the track was laid with little if any ballast under the ties, and once it was in use no one seems to have paid much attention to its maintenance. In winter the track was heaved by frost, and in spring the line was buried in mud, often to the top of the rails. Derailments were frequent, and on some of the early railroad tickets there was an agreement whereby the passenger was subject to call if needed to help replace the engine or cars on the rail. In summer weeds grew luxuriantly between the ties, and the motion of the train threw up a cloud of dust which mixed with smoke and sparks from the locomotive and then found its way into the cars and onto the passengers. The rails on some of the early roads were simply lengths of strap iron, insecurely fastened to longitudinal wooden stringers. They were constantly coming loose, and occasionally one of them would curl up through the floor of the car and transfix a passenger. Where timber was cheap, high and rickety trestles were built in place of more substantial bridges, and they weaved and groaned under the weight of the trains.

The early railroads were never fenced, and, in consequence, cattle from the surrounding country used their rights of way as pastures. The light locomotives were easily derailed, and in collisions with straying stock it was not unusual for them to come off second best. To give them some advantage the cowcatcher was invented. In the hands of a daring engineer it was very effective, even if the train had to be stopped to remove fragments of beef from the locomotives.

When the first railroads were built, there were no



**A serious problem in the early days of railroading was how to prevent the locomotive's sparks' setting fire to flammable wooden passenger cars. "Townsend's horizontal smoke pipe," above, was one solution proposed.**

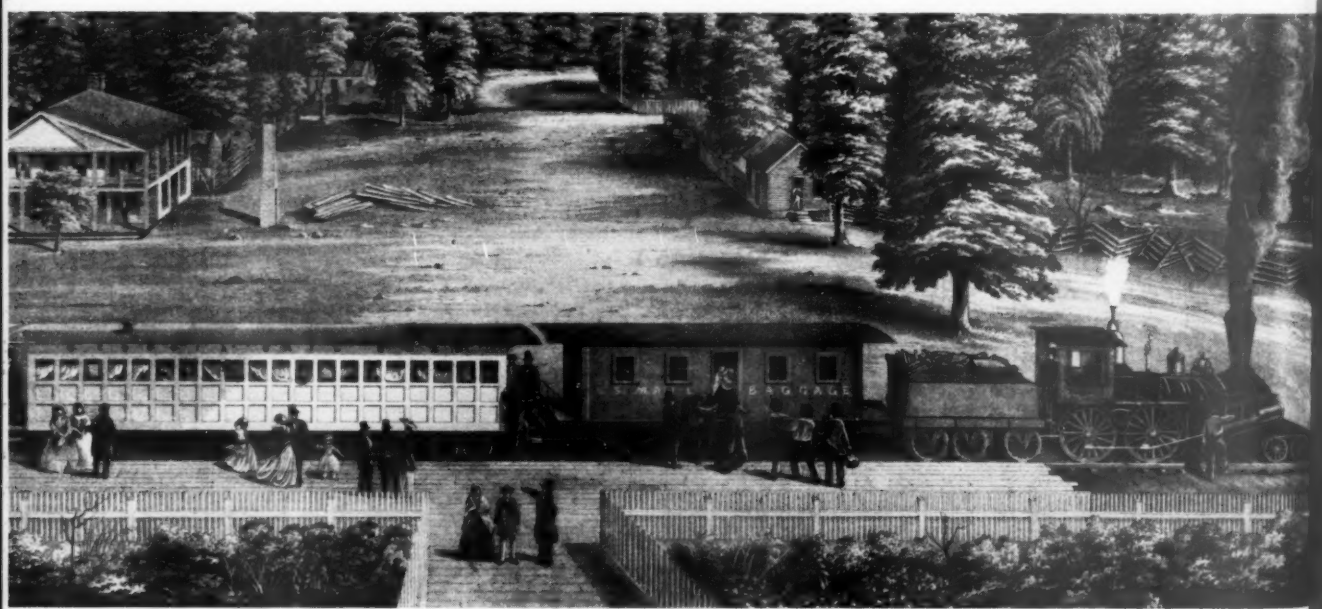
established standards, so the gauge or distance between the rails was determined by each builder on his own. It varied on different roads from four feet, eight and a half inches, which later became standard, to the six-foot gauge of the Erie. This lack of uniformity was of small consequence so long as each railroad was an isolated unit, or even during the time when they began to make contact, when through passengers were compelled to change trains at the end of each road. Changing trains, indeed, remained one of the standard inconveniences of travel until the sleeping-car system was perfected, and the standard-gauge railroads began to make arrangements for through passenger traffic over all connected lines. The roads built to gauges other than the standard were naturally barred from participating in these arrangements. Hence, loss of passenger business, added to the difficulty of handling freight, finally induced them all to change to the one gauge.

As freight and passenger traffic increased, heavier locomotives and cars were put into service and simultaneously the roadbed was improved. Inventors were busy with new forms of rail and novel switches, and as they were introduced they helped to increase the safety and comfort of travel. The present T-rail gradually came into universal use, and many of the roads were rebuilt to eliminate sharp curves and other kinks that had been built into them originally. Crushed stone or gravel was put between and under the ties, primarily to drain the track and keep the rails in place, but also to dispose of the clouds of dust in summer. In the end, prudent passengers always traveled, when possible, on ballasted roads.

On January 7, 1830, the Baltimore and Ohio Railroad inaugurated passenger service between Mount Clare and the Carrollton Viaduct, both just outside Baltimore, with a train of four open cars, drawn by a single horse. The distance was about one and one-half miles. While trips during the first few months were mainly excursions for the amusement of the public, the new mode of travel instantly became popular, and on all fair days more passengers were on hand than the cars, with a capacity of about thirty passengers each, could accommodate.

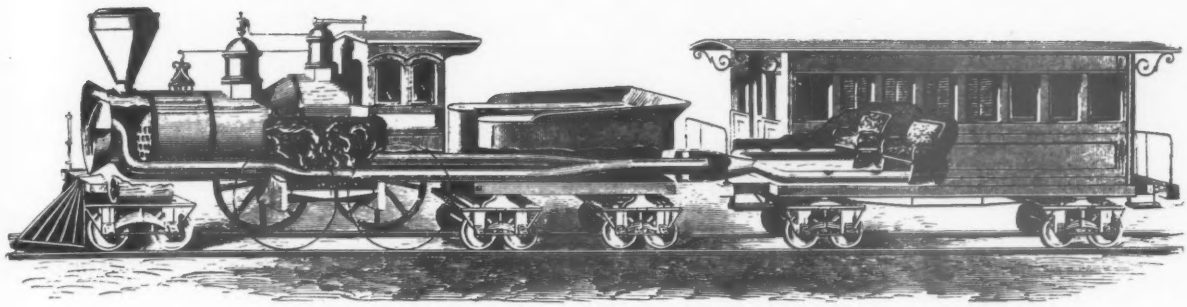
As the construction of the road advanced, the service was extended to more distant points, and a few closed cars were built for use in wet weather. These closed cars were little more than wooden boxes, mounted on trucks, in which the passengers sat on seats arranged around the sides.

The cars making up the excursion trains and the first closed cars were built without springs, but the lack of them does not seem to have been noticed by the passengers. The railroad, at its worst, was smoother riding than the stagecoaches to which many of them were accustomed, but, as the novelty wore off, complaints apparently came in. In the following year Jonathan Knight, the railroad's chief engineer, stated




COLUMBIA UNIVERSITY

**A stop for passengers and mail near Stone Mountain on the Georgia Rail Road.**



**Another problem that challenged the designers of railroad equipment was how to heat and ventilate the cars.**

**Many systems were invented, including this apparatus, supposed to convey heated air from the locomotive.**

in his report that it had been "found absolutely necessary to the comfort of the passengers that carriages used for their conveyance should be mounted on springs or some equivalent feature."

The trains made up of two or three cars were called "brigades of cars" when they were first put into service, but the use of the term was short lived. On August 27, 1830, the Baltimore and Ohio, in its advertisement in the Baltimore *Gazette*, changed to "train of cars" and continued the use of the latter term in its subsequent advertisements.

The Baltimore and Ohio cars were the first passenger cars used on an American railroad, but as other railroads came into operation similar cars were used or cars were improvised by mounting ordinary stagecoach bodies on flanged wheel trucks. On the short runs of the first few years that the railroads were in operation, the discomforts of a journey were more than balanced by the novelty and speed of the new mode of travel, but, as the journeys lengthened, larger and better cars were needed.

It was found that as the body of the car was lengthened it was necessary to space the wheels farther apart to avoid excessive seesaw motion, and when this was done, great difficulty was experienced in getting around sharp curves, and there was heavy wear on the rails and wheels. A broken axle, which was a frequent occurrence, was likely to cause a serious wreck.

Four-wheel cars were in general use until 1838, and a few were still running in 1850, but they were rapidly replaced after that time by the double-truck, eight-wheel car with a center aisle. All of the double-truck cars had a door in each end that led out to an open platform, and the conductor as well as the passengers could travel from car to car through the train. The link and pin with which the cars were connected, however, allowed considerable motion between the ends of the adjoining cars, and after a number of passengers had been crushed between cars or lost off the trains, notices were posted at all car doors warning passengers of the extreme danger of riding on the platforms or crossing to the next car. One railroad, to emphasize the danger, had a gravestone painted on the glass of each door. Another tried locking the passengers in, but after a wreck in which they were trapped in burning cars, this practice was discontinued.

The early American was a gregarious fellow, and in spite of all warnings he liked to travel through the train and inquire into the business of his fellow passengers. He was also an inveterate tobacco-chewer with habits, when so engaged, that were obnoxious to the lady passengers, so that some of the best trains were shortly carrying ladies' cars, reserved for women and any men who might be traveling with them. In these cars all the latest comforts and conveniences were to be found, and as early as August, 1838, maid service was available.

In 1856 the Baltimore and Ohio was building cars highly decorated with landscapes and other paintings, but such decorations did not improve their riding qualities, and in the same year the newspapers were filled with complaints that there was no real progress in car design. All agreed that a car with comfortable seats was a rarity, and there was a general belief that the railroads did not install more comfortable seats, such as the reclining night chairs that had recently been invented, because they would take up more space than the roads considered the public deserved. There was also a demand that clothes hooks and racks for baggage be extended through the entire length of the car. The inelastic car springs, in use on most of the roads, came in for their fair share of the general criticism. Fortunately for the passengers, the jarring of the cars was as destructive to the rolling stock as it was to their comfort, and, to save the cars, the railroads towards the end of the 1850's substituted India

*Continued on page 20*

# STORYBOOK LAND FOR A DAY

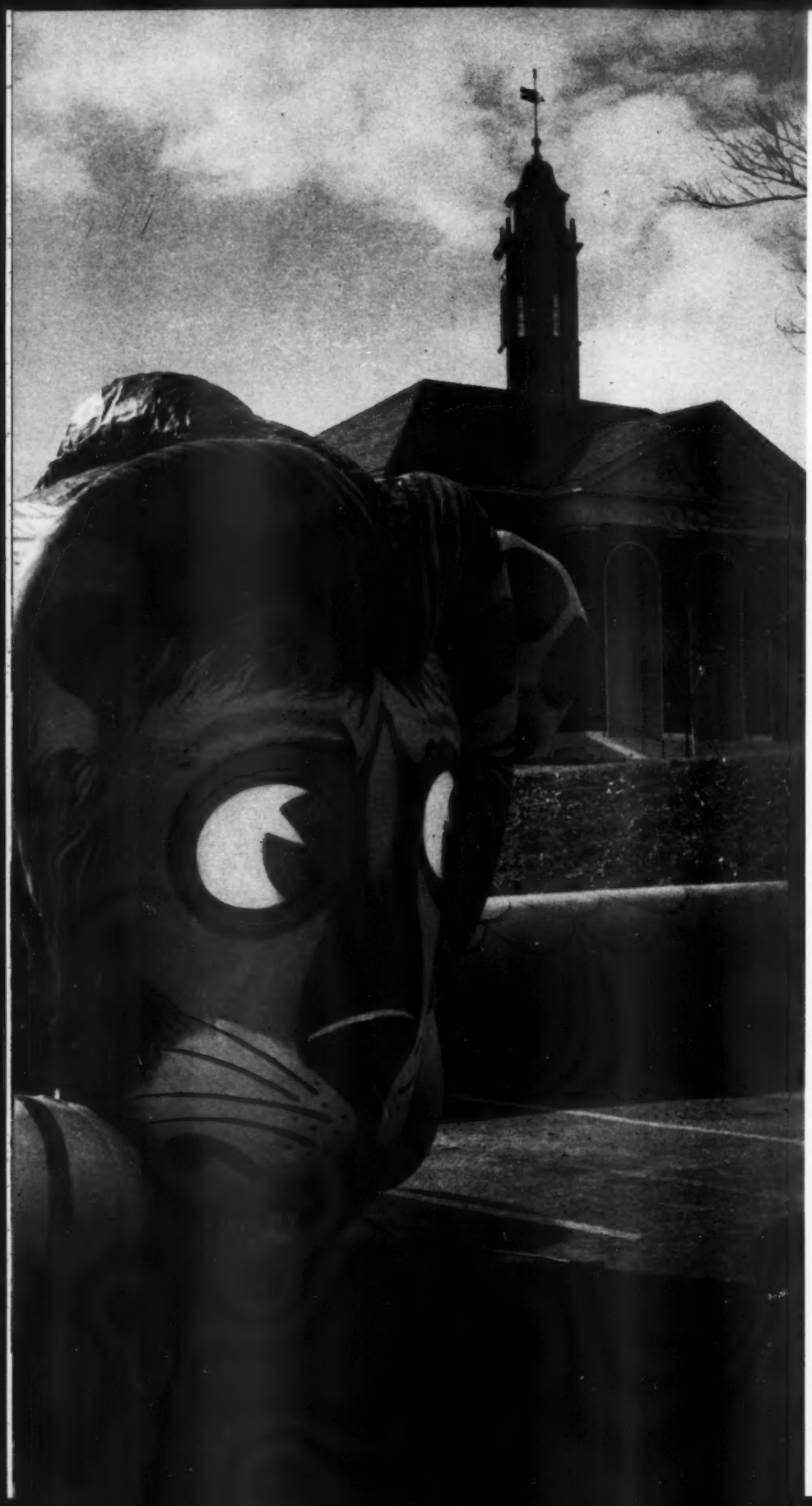
**Photographs for The Johns Hopkins Magazine by Alan J. Bearden**

For a few fantastic hours before Christmas, the Johns Hopkins campus is populated with scores of storybook figures, ten times bigger than life. In the lee of the University's ivied halls grow huge figures from Alice, Oz, and the Arabian Nights. Like inhabitants of Lilliput, mere humans swarm about the giants, fettering them with ropes. But sometimes, as on the day the pictures were taken for these pages, gusty winds sweep the campus, catch the figures, and nearly wrest them from their captors' control.

Johns Hopkins, on this wintry day, is the assembly point for a Baltimore department store's pre-Christmas parade. Brass bands warm up on the University quadrangles, clowns loll under the bare elms, and an octet of tiny reindeer stir restlessly in the traces of Santa's sleigh.

It's the start of the holiday season. Merry Christmas!

**ARABIAN NIGHTMARE** A grinning Aladdin, not yet aware of the jinni his magic lamp contains, rubs noses with the cupola on Johns Hopkins' Latrobe Hall.



## A COWARDLY LION

Swelling with air before the Christmas parade, he crouches with fright in the shadow of Shriver Hall at Johns Hopkins.

## THE MOCK TURTLE

His eye squeezing out a tear, the Mock Turtle sits sad and lonely beside Maryland Hall.

By SARAH ELIZABETH FREEMAN

# *COINS: TREASURE*

## *They hold the clues to many facts*

**In ancient times, coins carried news to remote areas of an empire and were often "read" before they were spent. Emperor Claudius issued this one to celebrate the victories of his father, Nero Drusus. It was minted around 42 A. D.**

"YOU ARE NOT," says Philander in the first of Joseph Addison's *Dialogues upon the Usefulness of Ancient Medals*, "to look upon a cabinet of medals as a treasure of money, but of knowledge. . . . The intrinsic value of an old coin does not consist in its metal but its erudition."

Coins form one of the few, if not the only, continuous series of genuinely contemporary documents from *circa* 700 B.C. to the present time. Their value in almost any field of humanistic study is immense, for often they are the most reliable records of the art, history, and general culture—as well as the economics—of the periods in which they were issued.

In many instances, indeed, they are our only record. They depict buildings and other structures long since demolished, works of sculpture now lost, and portraits of men who are otherwise unknown. In the verse of Alexander Pope, inspired by Mr. Addison,

The Medal, faithful to its charge of fame,
Thro' climes and ages bears each form and name:

**The emperor Vespasian, founder of the Flavian dynasty, issued this bronze coin to proclaim victories in Palestine around 71 A. D. It shows a Jewish captive under a Judaean palm.**

PHOTOGRAPHS BY ALAN J. BEARDEN

# E TROVE OF HISTORY

## *that might otherwise have been lost*

In one short view, subjected to our eye,
Gods, Emp'rors, Heroes, Sages, Beauties lie.

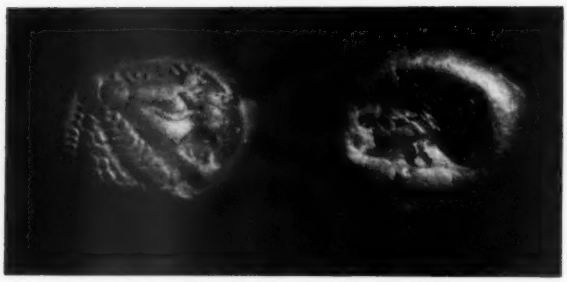
Ambition sigh'd. She found it vain to trust
The faithless Column, and the crumbling Bust;
Huge Moles whose shadows stretch'd from shore
to shore,
Their ruins perish'd, and their place no more!
Convinc'd, she now contracts her vast design;
And all her triumphs shrink into a coin.

THE WORK involved in making coins, until comparatively recent times, is scarcely believable, considering the vast numbers issued and the pleasing results more often than not attained.

Until around the beginning of the sixteenth century, coins were struck by hand. Two dies had to be prepared. One, to produce the obverse or "heads" side of the coin, was imbedded in an anvil; the other, for the

**Nero, around 64 A. D., had this coin struck to symbolize imperial largesse, the distribution of grain to the poor people of Rome. The coins on these two pages are bronze and are the largest size—called sestertia—to be issued.**

**Trajan, noted for his building programs, notably the Forum of Trajan in Rome, had a bridge built across the Danube River and issued this bronze coin to mark the feat.**



**Earliest coins had a design on one face only. The die which made this design was imbedded in an anvil, on which a piece of metal was placed and struck with a punch. The punch left a rough mark, seen at the right.**

reverse or "tails" side, was engraved on the end of a punch. The flan, a piece of metal of the proper size and weight, was sandwiched between the dies, the upper end of the punch was given one or more blows with a hammer, and the intaglio designs on the dies were transferred, in relief, to "types" on the coin.

The early coin-makers used no collars around the metal, so the filling in the sandwich oozed out when pressure was applied, producing the irregular shapes that contribute a good deal to the charm of ancient coins. It was usually a matter of chance if the types were centered and in the same plane, and a recognizable portion of the design was often considered sufficient.

Today a sculptor makes a model of a proposed coin in relief, and then machinery takes over. One machine reduces the model to any desired dimension, making possible the use of precisely the same type on coins of any size. Another produces as many identical dies as needed, for use in the ranks of power-driven presses capable of turning out hundreds of pieces every minute. In the days of hand-striking, however, the artist designed the type to fit the coin, and he engraved a die of the same size in intaglio. When the die broke or became too worn to use, he or a colleague engraved another. Even though a master pattern might have been followed or the same general type employed for many years, no two dies were ever identical, due to the varying artistic abilities and craftsmanship of the individual engravers. Even those coins that were obviously fashioned by the same hand show changes; no artist, apparently, could resist the impulse to make alterations, for better or for worse.

THE STUDY of dies, engravers, mints, and other technical aspects of coins—the job of the numismatist—can be of inestimable importance to students in other fields. In recent years this study has undergone many changes. Style, so susceptible to personal interpretations, is no longer considered the sole criterion for the classification of coins. Spectrographic analyses have become almost commonplace.

The most profitable results can be obtained from a detailed examination of the known specimens issued at a specific mint. Due to the methods of striking, the reverse or punch die, which received a direct blow from the hammer, inevitably broke and had to be replaced more often than the anvil or obverse die. In addition, all dies were subject to constant wear. By charting all the combinations of new and worn dies, an exact chronological die-sequence can be established.

The importance of such chronological evidence for comparative uses in related fields, such as art and history, cannot be overestimated. For if magistrates' or mint-masters' names occur on the coins, as is often the case, these too will fall into proper order. This alone may be of importance to the historian. Or it may, in turn, reveal the inner workings of the mint or a system of local elections. For the student of art, coins are miniature pieces of sculpture which, in their evolution of style, closely parallel the larger works. They thus furnish welcome evidence for relatively accurate dating of hitherto undated art objects.

PRIMARILY, of course, coins are media of exchange.

## THE GREAT COIN COLLECTION AT JOHNS HOPKINS

THE numismatic collection at Johns Hopkins—coins, tokens, and medals—forms the largest and most valuable division of the University's fine arts collection. Though little known outside of scholarly circles, it is one of the country's great coin collections. Of the more than twenty thousand pieces which comprise it, only a few hundred would pass current today, although a great many could be converted into impressive amounts of coin of the realm. There is much more to a coin, however, than its face, intrinsic, or sales value, as the author, curator of fine arts at Johns Hopkins, demonstrates in her article, and there is no place where this can be better appreciated and put to use than a university.

At least one third of the Hopkins collection is composed of what is known to the trade as "ancients"—that is, chiefly Greek and Roman. Most of the other pieces are typical and choice issues representing nearly every known country, sovereign, or other issuing authority from the fall of the Roman Empire to the early nineteenth century, when the complete mechanization of technical processes involved in the making of a coin, the conversion of mints into mass-production factories, and political control resulted, with a few notable exceptions, in monotony.

**First silver coins were minted in Aegina, an island state off Athens whose symbol was a sea-turtle (left). Reverse of coin is merely a square punch with lines cut in it.**

**"Owl" of Athens, first struck after 561 B. C., was the first coin to have a definite "type" on both sides. Athena's head is on the obverse, her owl on the reverse.**

They are simply pieces of metal, of a certain weight, bearing the device or recognized mark of the issuing authority as a guarantee of value and authenticity. They were originally devised as substitutes for the less portable and less easily divisible units, such as oxen or sheep, silver bowls, or large metallic ingots, which had previously been bartered in trade.

Coinage probably originated more or less simultaneously in East and West.* Western coinage began along the coast of Asia Minor around 700 B.C. The use of coins soon spread to the mainland of Greece and thence, following colonization and trade, throughout the ancient world.

There is scarcely any material which, in some period or place, has not been used for coins. Availability was often the prime factor in the choice. The earliest coins issued in Asia Minor were made of electrum, in this instance a natural rather than an artificial mixture of gold and silver, which was plentiful in that area. Silver was the chief substance employed for coins on the mainland of Greece, while the earliest Roman issues were of bronze, an alloy of copper and tin.

The earliest silver coin was minted in Aegina, an island state situated off the Piraeus, the harbor of Athens. The device of the Aeginetan state, which held commercial supremacy in the Aegean area in the seventh century, was the sea-turtle, which was used as the obverse type on the coins. The reverse was merely a square-headed punch with lines cut into it, forming a pattern. Aegina continued to use the "incuse square" as a type for almost the entire extent of her coinage. This uniformity of type is characteristic of an international currency. The Aeginetan Turtles, issued in large quantities and widely circulated, served as the chief coin throughout southern Greece until the time of the Peloponnesian War.

The coins of two other Greek city-states also attained international fame, being known familiarly as the "Owls" of Athens and the "Foals" or "Colts" of Corinth. Although there had been earlier issues with a variety of types, the renowned coin of Athens was first struck after Pisistratus became tyrant of the city in 561 B.C. It was the first coin to bear a definite type on both faces. A head of the patron goddess Athena occupies the obverse, and her owl is on the reverse. Later, a twig from her olive tree and the crescent moon were added to this type. It is also one of the first coins to bear the name as well as the device of the place of origin, in this case abbreviated to AΘE. Athenian Owls have been found in quantities throughout the Mediterranean area and as far east as India. They were also frequently flattered by imitation.

The famous Corinthian city-badge was Pegasus, Bellerophon's steed. Corinth commanded the isthmus and the gulfs splitting the mainland of Greece and separating the Aegean from the Adriatic Sea, where ships were often dragged across the narrow strip of land or cargoes transferred to avoid disaster on the rocky promontories of the Peloponnesos. Much of Corinth's coinage went to the west, to the colonies in southern Italy. It was, in fact, one of her most staple exports, being sought not as money but as a source of metal. Sufficient traces of the original designs occasionally remain to show that many of the coins issued by cities in Magna Graecia were overstruck on flans made from coins of Corinth.

**Corinth's Pegasus**

WITHOUT A THOUGHT for the economic dangers, the Greeks seem to have considered coins the best means of

*The study of Oriental coins is a science unto itself. While well represented in the collection at Johns Hopkins, they are not of general interest to those primarily concerned with Western civilization. The Islamic issues, closely allied to Western coinage but, due to religious conventions, differing radically in type, are likewise a subject for the specialist.

**Spoils of war gave rise to some of the most beautiful coins ever struck, the decadrachms issued by Syracuse after the defeat of Athenians in 413 B.C. An annual festival, with games, celebrated the victory (left). At right, Arethusa, goddess of a spring at Syracuse, is ringed by dolphins symbolizing the surrounding sea.**

**Portraits of living monarchs gradually began to appear as the chief "type" on coins after break-up of Alexander's empire. Among best examples of realistic portrait work by Greek engravers are these: Antiochus I, minted at Seleucia around 265 B.C., and Eucratides, king of Bactria, portrayed in his imperial sun helmet.**

using an excess of metal. The largest silver coin generally issued at the Greek city mints was the tetradrachm (four drachms). On several occasions, sudden wealth resulted in unusual issues of much larger pieces. Some of the most beautiful coins ever struck, often chosen as the finest of the Greek series (although there are others as fine but not as well-known), were struck from the spoils of war. These are the famous decadrachms issued by the city of Syracuse in Sicily, following the defeat of the Athenians at the Assinarus in 413 B.C. A festival with games was established as an annual celebration of the day of victory, and the prizes included armor captured in the battle. A panoply of armor, inscribed "Prizes," is represented on the coin. Victory crowning the driver of the four-horse chariot, so magnificently rendered on this piece (though a common Sicilian type), might well refer to an event in the games. Many of the coins in this special issue are among the relatively few ancient coins which bear the signature of the artist responsible for the dies. In the accompanying picture, the quadriga is from a die by Euainetos, and the other type is from a die by Kimon. The head on the latter, incidentally, is identified as that of the nymph Arethusa, goddess of a fresh-water spring at Syracuse. The dolphins are symbolic of the surrounding sea.

Characteristic costume, coiffeur, or physical attributes generally make easy the identification of the gods and goddesses whose portraits were commonly used as the obverse types on most Greek coins. Sporadic examples of what must be portraits of actual persons occur on issues of some eastern satraps in the early fourth century, but it is not until after the division of Alexander's empire into a number of kingdoms that an identifiable portrait of the living monarch gradually became the natural choice for the chief type. That the Greek engravers were capable of realistic work when opportunity afforded is evident from such coins as the silver tetradrachms of Antiochus I, minted at Seleucia on the Tigris about 265 B.C., and Eucratides, King of Bactria, attired in his imperial sun-helmet, surely one of the most successful coin-portraits of all time.

THE EARLY ROMANS put conquest before culture. Their first coins were irregular lumps of cast bronze, shaped eventually into blocks and bars and, later, circular forms. Their first silver coin, struck in 269 B.C., was patterned essentially after issues of the Greek cities in southern Italy. Early Republican coins, technically excellent and produced in great numbers, were efficient and uninspired, for the Romans did not believe in art for art's sake. Like everything else, it had to serve a purpose.

The realization that coin types were eminently suited for the recording of past achievements and the honoring of famous ancestors fortunately coincided with an influx of highly skilled Greek engravers in search of employment under their new masters. Hellenic interpretation of Roman realism produced the fine coins of the late Republic and Empire. The Romans were keenly interested in personalities and, consequently, in portraiture. It was their chief contribution to coinage.

As the ruler's portrait took the place of the city-badge or other device symbolic of the issuing authority, the reverse type was devoted to some imperial action, event, or policy. These types, of which there were often many different ones in a single year, thus form an illustrated digest of the emperor's life.

What other documents furnish us with such a concise and complete record or serve, so vividly, to perpetuate the memory of great actions? Did you "never fancy before, that a Coin could have any nobler use in it than to pay a reckoning?"

# A Johns Hopkins Gazette

**AN UNOFFICIAL COMPENDIUM OF FACULTY AND ALUMNI APPOINTMENTS, HONORS, AND ACCOMPLISHMENTS**

Not long ago, the treasurer of the University issued his annual financial report. It showed that after years of operating at a deficit, Johns Hopkins had managed to end its most recent fiscal year with a small operating surplus: $54,361.

Encouraging as this black-ink figure was, however, anyone who knew the story behind it was aware that the surplus, if considered alone, could be highly misleading. Items:

¶In an effort to overcome the dangerous deficit conditions of previous years, the University had had to postpone many badly-needed salary increases for its faculty. To be fair to its faculty members—indeed, simply to hold them and to attract new people in today's competitive situation—faculty salaries at Johns Hopkins must be raised substantially, and soon.

¶A number of important vacancies existed on the faculty during the 1956–57 fiscal year (the period covered by the report); death and retirement, for example, had taken an unusual toll. The vacancies meant a temporary reduction in salary costs—but only temporary. If the University's strength as an educational and research center is to be kept at a high level, such vacancies must be (and, with few exceptions, have been) filled.

¶Such costs as payments on the new (and urgently needed) dormitory for medical students do not appear in the '56–'57 report. The payments begin in the new fiscal year, however, and next year will level off at about $77,000 annually—a figure which alone is over $20,000 more than the '56–'57 surplus.

¶At the School of Medicine, the operating budget was balanced only by spending $145,000 of non-recurring funds which had accumulated in special accounts. The funds now are gone.

¶Although gifts to Johns Hopkins reached high levels last year, most of them (such as those for launching the revised program of medical education) were restricted to special, specified uses and do not aid the current-expense situation.

¶A large part of the expenses in some areas of the University (*e.g.*, the School of Hygiene and Public Health) has been financed by grants from foundations. These grants are customarily made for a specified number of years. When they expire—unless new money can be obtained to replace them—the rosy operating-expense picture of one year can turn into a dark one the next. This now appears to be imminent.

Thus the need for unrestricted funds—money that can be used to keep the University's operations at a high standard—is acute.

## SOCIAL RELATIONS

The Ford Foundation has announced a $750,000 grant to the Johns Hopkins University for the establishment of a department of social relations. The department, which will be financed for ten years by the Ford grant, will undertake work in the fields of social theory, cultural anthropology, social psychology, and demography. The new department will serve as a focal point of information from various social science areas of study.

It is also expected that there will be new appointments made to the faculty to fill positions in the new department, but professors in any of the currently existing social science departments may work co-operatively on joint projects in social relations which cut across disciplinary lines.

## NOT SCHEDULED

After losing the first game of the season to Franklin and Marshall 13 to 6 and winning the home opener from Washington and Lee 13 to 12, the Johns Hopkins varsity football team fell victim to an unscheduled opponent, Asian flu. When first-year coach Wilson Fewster found that half of his thirty-eight man squad was ill and that he had no centers, guards, or tackles in playing condition, he was forced to cancel the season's third game, scheduled to be played at Haverford College. It was reported to be the first time a Hopkins football team was unable to play against a scheduled opponent.

## THE FACULTY

ROBERT M. MOTTAR

**William Kurrelmeyer**

Dr. Kurrelmeyer, B.A. '96, PH.D. '99 (German), professor of German '24–'44, professor emeritus of German, died on October 9, 1957. He was appointed instructor in German at Johns Hopkins in 1900 and had been a member of the faculty since that time; in 1927 he was appointed chairman of the German Department. He became co-editor of *Modern Language Notes* in 1916; the journal dedicated its May, 1953, issue to him. The magazine stated its belief that Dr. Kurrelmeyer had "brought to light more German words than any other man in recent years." He edited a ten-volume translation of the pre-Lutheran German Bible and an extensive work of German lexicography.

In addition to his scholarly work, Dr. Kurrelmeyer carefully collected a library of more than 25,000 volumes, primarily German literature of the eighteenth and nineteenth centuries and scholarly reference works. In seven gifts over the last seven years, he had presented most of this collection to the Johns Hopkins University library.

In The Faculty of Philosophy, Paul H. Emmett, professor of chemistry, has received the Kendall Award in colloid chemistry "for contributions to the Brunauer-Emmett-Teller method of measuring the surface area of solids."

H. Bentley Glass, professor of biology, has been awarded an honorary sc.d. by Washington College in Chestertown, Maryland.

Philip Hartman, b.a. '34, ph.d. '39, professor of mathematics, is visiting professor of mathematics at the University of California in Los Angeles for the current academic year.

Ernest F. Penrose, B. Howell Griswold, Jr., professor of geography and international relations, is serving as visiting professor of economics at the University of Baghdad for the current academic year.

Mark Perlman, assistant professor of political economy, is a visiting lecturer in economics at Harvard University for the current academic year.

Franco Rasetti, professor of physics, has been awarded an honorary ll.d. by the University of Glasgow in Scotland.

In the School of Medicine, Jacob H. Conn, b.a. '25, assistant professor of psychiatry, has been appointed associate editor of the new *Journal of the American Society of Clinical Hypnosis*, and to the board of editors of the Publication Society of the Institute for Research in Hypnosis.

Leo Kanner, professor of child psychiatry, has been chosen as the annual Maudsley lecturer by the Medico-Psychological Association of Great Britain. He is the second American so chosen.

In the School of Hygiene and Public Health, Carl Lamanna, associate professor of microbiology, has been appointed scientific director of the Naval Biological Laboratories at the University of California Naval Supply Center in Oakland, California.

# The Glory of the Rail Road

*Continued from page 9*

rubber in the form of blocks. For a time it was widely used, but the rubber then available rapidly lost its resiliency, becoming rigid or frozen, and by 1865 it was going out of favor, to return in recent years.

Although early railroad journeys were short, many of the passengers had occasion to carry baggage or other impedimenta with them on their travels and, as there was little room in the cars to store it, the great bulk of it was carried on the tops of the cars. This method of conveying baggage was the cause of much delay to the trains as well as of damage to the cars, and it called for considerable labor by the train's crew. A few years' experience showed the railroads the need for separate cars for baggage.

The passengers, however, had to sort out and look after their own baggage, for the railroads assumed no responsibility for either loss or damage and, to emphasize the fact, caused notices reading, "All Baggage at the Owner's Risk," or signs similarly worded, to be posted in all railroad stations. For a time signs were considered sufficient notice, and in the face of them the great majority of people who suffered a loss were unwilling to start legal proceedings against a powerful railroad corporation, but eventually

a few of the more hardy took their cases to court and were uniformly successful. The courts took the attitude that if the railroads were not held responsible, there was nothing to prevent them from engaging thieves to loot the passenger's baggage and sharing in the spoils.

In the early days travel by night was a dark and gloomy business. The cars were lighted by candles, one at each end, and in the dim light reading and other pastimes were impossible. For years after oil lamps were in general use for home illumination, most of the railroads continued using candles, for there was less danger of fire from them than from oil. As cars of greater length were built, however, illuminating them by candles became more difficult and expensive, and by 1870 the great majority of cars in service were equipped with kerosene lamps. These lamps gave a brighter light than candles, but they flickered and smoked in every draft and their fumes saturated the car.

In the first days of the railroad, because of the greater available speed, passengers were satisfied to travel only by day, but as greater distances were covered in continuous journeys, there was a demand for trains that ran through the night. Sitting all day on the hard, stiff seats was uncomfortable enough, but a night journey on the same seats in a dark, stuffy car produced discomforts that shook the hardiest passenger. Anything was better than the seats then in use, and in 1836 the Cumberland Valley Railroad put a crude form of sleeping car or bunk car into service. The other railroads followed, and in a short time sleeping cars of one sort or another were in use on most of the roads that ran trains at night. They were for male passengers exclusively, and only for those that were not particularly squeamish, but as the West was settled and night journeys became a commonplace of travel, a

# GENTLEMEN* . . . BE SEATED!

*and Ladies!

CAPTAIN'S CHAIR—Now, for the first time, this popular chair is available in both an adult size and, in exact miniature, a child's size. Both are finished in black with gold trim. On both, the Hopkins seal is emblazoned in full color. They make wonderful gifts for home or office.

ADULT SIZE **$29.95**

CHILD'S SIZE **$15.95**

MATCHING CHAIR FOR LADIES—Another handsome addition to our line of Hopkins chairs, the ladies' model (*right*) is black trimmed in gold. The University seal is in full color. **$17.95**

THE JOHNS HOPKINS UNIVERSITY BOOKSTORE
Homewood, Baltimore 18, Maryland

*Enclosed please find $_____. Please send me:*

____ Man's chairs @ $29.95 ____ Child's chairs @ $15.95

____Lady's chairs @ $17.95

*Shipping charge (from Gardner, Mass.) collected on delivery.*
*On orders to be shipped to Maryland addresses, add 2% tax.*

NAME.....

ADDRESS.....

CITY.....ZONE....STATE.....

reasonably comfortable sleeping car became a necessity, and by 1860 over twenty types had been patented, some of which were put into actual service.

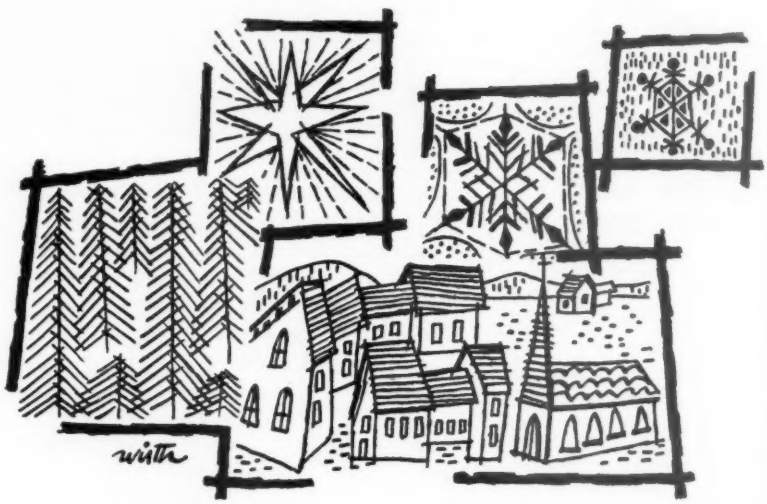
When the railroads had been built to such distances that it was possible to make a continuous journey of more than a few hours, some means had to be found of feeding the passengers. Some of them carried their food with them, but others preferred to eat along the road, and these took advantage of the frequent stops to get out and forage.

Eating houses quickly sprang up at junction points, and as traffic increased, dining stations and refreshment saloons were established by the railroads themselves at the towns along the line. A few were excellent and their meals became famous, but most of them were second rate, and in a number the food was uneatable.

All through trains were delayed as much as an hour a day to allow time for meals to be eaten, which took from ten to twenty minutes for each meal. In that limited time there was a wild scramble among the passengers to get down at least part of a meal before the train pulled out. In winter or in stormy weather many people were reluctant to leave the train, and the old and infirm were barred from eating in such places at any time.

The meals were spaced to suit the schedule, and the passengers might get all three meals within a few hours on one section of the road and fast for long periods between meals on another. If the train was delayed, they would be without food for hours except for such provender as the news butcher brought round. Each eating place usually had its specialty, which was served every day. After the telegraph came into use, it was the custom of the conductor to go through the train some time before it was due at a dining station and ask all the passengers who intended to eat there to signify the fact. He would then telegraph ahead, so that the proper number of meals could be prepared. Where chicken was the house dish, this was the signal to start killing, and cases are reported by imaginative travelers of chickens still kicking when brought to the table. That the food was purposely served too hot to be eaten in the limited time, and was re-served to those on the train following, also seems to have been a popular belief.

It was not until 1867 that the first diner was put into service. In that year George M. Pullman introduced his first so-called hotel car on the Great Western Railroad of Canada. This was a sleeper with a small kitchen in one end, and the meals were served on tables that were set up, when needed, between the seats. There was an ample supply of elegant crockery and table linen, and the passengers were given their choice of a number of dishes prepared by a professional cook. These comforts, however, were reserved for the occupants of the car. The advantage of allowing the other passengers to eat aboard were apparent to everyone, and in 1868 Pullman placed the first dining car open to all passengers in service on the Chicago and Alton.




The introduction of the diner was the first step toward converting the entire train into one unit. Previous to that time there was no necessity for a passenger to move from one car to another while the train was in motion, but to reach the diner he had to travel through the train and cross the dangerous platforms. The greatest hazard faced by a passenger crossing from car to car was not so much due to the space between the cars as to the violent swaying of the platforms when the train was running at high speed. No effective method was devised for checking this motion until the introduction of the vertical end frame, or friction plates, in 1887. The vertical end frame was designed not only to reduce the violent motions of the platforms, but also, and chiefly, to act as a buffer between the cars and cushion the sudden jerk and the racking of the cars when the train was started or brought to a stop. It was adaptable for use on cars with open platforms as well as on those with closed, or vestibule, platforms.

The vestibule train, with all the luxurious cars that were part of it, seemed, at the time it was introduced, to be the height of comfort. The cars making up the train were comfortable enough, although their ventilation was defective and dust and smoke still came aboard, but, as they were built largely of wood, they were no safer in case of accident than the ones that had preceded them. The passenger still ran the risk, as before, of ending his journey by being pulverized or cremated. To minimize the danger from wrecks, cars built partly or entirely of metal had been suggested at different times, and a particularly bad accident usually produced a new crop of ideas.

With the abundant timber then available, wooden cars were far cheaper to build than metal cars, and there was also the fear that in a wreck, unless the entire train was made up of metal cars, those so built would plow through the wooden coaches making up the balance of the train and kill or maim everyone in them. However, the interest in metal cars continued, and in the course of the next three decades a number of ideas were worked out, among them that of making pressed steel sections which proved to be of great value when the all-metal car eventually arrived.

Following the extensive timber cutting of the 1870's and 1880's, the carbuilders found themselves facing a diminishing timber supply at the same

time that there was a demand for larger and stronger cars. The cars by then had reached such sizes and weights that it was practically impossible to get timber of the required dimensions, and, in place of the solid timber previously used, various types of wooden trusses, borrowed from the bridge-builders, were framed into the car to support the body. Such construction increased the weight without a corresponding increase in strength, and by the end of the century steel was being substituted for wood in those parts of the car where great strength was required. The all-metal car followed as a matter of course, and in 1906 several of the railroads had it in service.

The first steel cars of this period squeaked and groaned like a ship at sea, and the efforts to imitate the elaborate finish of the wooden coaches, by painting the steel plates to simulate mahogany and parquetry, were not overly successful. But better construction eliminated the noises and eventually a more suitable system of decoration was used on the interiors.

PRESENT-day ventilating devices, especially those for use in winter, would have been considered highly dangerous by most of the passengers who rode the railroads in the early days, and the car-builders, in keeping with the times, gave little attention to the airing of their cars. In hot weather it was the custom of the male passengers to open the windows and rest both feet on the window sill, and a train with a pair of feet projecting out of each window was not an unusual sight. In winter the stove was kept at a red heat, and since the cars had no effective ventilators, the only fresh air that entered came in a blast when the door was opened or leaked in through the floor and chilled the passenger's feet. The fumes from the hot and rancid animal fat used to lubricate the axle entered with the air.

Besides the lack of controlled ventilation there was always the presence of smoke, and, in dry weather, dust, often mixed with sparks from the locomotive. In summer, when the windows were open, or in winter, when the door was open, clouds of the mixture entered and were the cause of more complaints from the passengers than all their other discomforts together.

Various schemes were proposed to obviate the smoke and spark nuisance, among them that of extending the smokestack of the locomotive back over the cars to the rear of the train. Passing the smoke through jets of water to quench the sparks was suggested, but there were objections to all such ideas, and most locomotives were eventually equipped with some form of spark-arrester, built into their smokestack. Such spark-arresters were widely used after the late 1830's, and the gigantic, conical-shaped smokestacks that housed them became a familiar feature of the wood-burning locomotives. As coal replaced wood as fuel there was a resulting reduction in the smoke and cinders, but the nuisance remained in part to annoy the passengers in summer until the modern system of air conditioning was perfected.

BEFORE the days of the railroads the country was made up of communities that were more or less isolated from one another. Travel between them was slow and uncertain, and there was no business in which the smaller divisions of time were important factors. Each community fixed its local time according to custom, usually by the sun, and no one was affected or even knew if the clocks in the neighboring towns were either ahead or behind his own.

With the coming of the railroads, and later the telegraph, time became of more importance in daily life, but it was not until the railroads were running on regular schedules that the confusion arising from the diverse systems of time became a matter of concern to anyone. It was then largely a railroad problem, and in an effort to solve it the roads devised systems of their own. But as each road adopted a different system, and the long ones several, their attempts at a solution only added to the confusion. In each city there were at least two systems of time in use, the local and the railroad, and if a number of railroads entered the city, there was an additional system for each road.

At Buffalo, the New York Central time was twenty minutes ahead of Buffalo local time, and the Lake Shore time was fifteen minutes behind. Baltimore was three minutes ahead of Washington. Batteries of clocks erected in the principal railroad stations were set to show the local time, the railroad time, and the time in the largest cities along the line. Gadgets were sold on which the various times could be quickly

MEDICAL-
DENTAL
EXCHANGE

*

*Financial Services*
*Since 1938*

*

DELINQUENT
COLLECTIONS
*for the*
PROFESSION

*An Audited and Bonded*
*Credit Service*
*for the*
*Doctor, Hospital*
*and Patient*

*

Medical-
Dental
Collections
INC.

809 CATHEDRAL ST.
BALTIMORE 1, MD.

LEO BADART
PRESIDENT

*Audited by*
WILLIAM A. GILLESPIE, C.P.A.

*For students, faculty, alumni, and friends*

*The Johns Hopkins*
BALTIMORE SYMPHONY ORCHESTRA
*Concert Series*

MASSIMO FRECCIA
*Conductor*

SUNDAY AFTERNOONS
AT 4 O'CLOCK
*February 2*
*February 16*
*March 2*
Shriver Hall, Homewood

$5 for the series. For reservations, make checks payable to JHU CONCERT SERIES and mail to Student Music Program, The Johns Hopkins University, Baltimore 18, Maryland.

Inexpensive hand-made silver and gold
*Jewelry*
and small objects of ASIAN ART
make ideal gifts. Visitors welcome.
*The* MARCO POLO *Shop*
109 W. Saratoga St., Baltimore 1
*MUlberry 5-2726*

calculated. Everyone recognized the need for a uniform system for the entire country, and different schemes were proposed, but little was done until after the first railroad to the Pacific was in operation and the problem became acute.

Among the schemes proposed was one by Charles Ferdinand Dowd, A.M., PH.D., in a pamphlet he published in 1870 entitled "A System of National Time for the Railroads." That system, with some modifications, is the one now in use. Dowd was a methodical person, and the confusing time standards then in use were to him entirely without reason. As a diversion he made a study of the subject and finally developed the system proposed in his pamphlet.

His original idea was to divide the country into four sections on meridian lines, each section to cover fifteen degrees of longitude or one hour in time, with the meridian of Washington as the primary meridian. It was later found desirable to make certain modifications in the boundary lines, so as to avoid having them pass through cities, and to change the primary meridian from Washington to seventy-five degrees west of Greenwich. The value of his plan was immediately recognized by the railroads, but at the time they were engaged in wars over rates and other matters and were not in a mood for cooperation. The country as a whole was apathetic. Each community took a certain pride in its local time and resisted all efforts to make even minor adjustments.

But Dowd was not to be discouraged, and for twelve years after 1870 he traveled around the country attending railroad conventions and promoting his plan wherever he could find an audience. The press was generally in favor of Dowd's idea and carried on a campaign explaining the advantages of a national system. Gradually opposition lessened. The American Society for the Advancement of Science, the American Meteorological Society, and the American Society of Civil Engineers urged the adoption of Dowd's plan. In 1879 Sir Sanford Fleming, chief engineer of the Canadian Pacific, proposed a similar system for the entire world. Finally, in 1883, the American Railway Association, representing the management of 78,000 miles of railroad, adopted the Dowd plan, and it was put into effect by the railroads on November 18, 1883, with little inconvenience to anyone.

In recognition of his services, Dowd received annual passes on all the railroads of the country. He was killed by a train on a crossing at Saratoga, New York, November 12, 1904.

With all its dangers and discomforts, the early railroad had the great advantage of speed over all other means of land transport then known, and it held that advantage until very recent years. In the first years of its existence in the United States, traveling by rail was considered a grand adventure, and as each new line was opened the surrounding population made a holiday of the event and turned out to see the first train and hear the oratory of its load of notables. As the novelty wore off, the railroads were accepted by the public as a natural phenomenon of the fast-growing country, and everyone who could find the money traveled on them. People not only traveled on them; they took a very personal and proprietary interest in them, and it was rare for an American passenger in the first years to vent a complaint. The dirt, the discomfort, and the possibility of sudden death were looked on as a small price to pay for the privilege of moving over the country at what was then a dizzy speed. While some of the English tourists of the time wrote of unpleasant experiences, they were put down as envious foreigners and received little attention.

During the railroad's first fifty years there was a constant stream of improvements in passenger cars and in the other equipment affecting the passenger. Bed cars, air conditioning, streamlining, and many other innovations introduced within the last few years were then first suggested. Some were actually tried out. But as competition among the multitude of small railroads abated, the incentive for improvement diminished, and eventually the business of devising, building, and operating luxurious passenger equipment became the monopoly of the Pullman Company.

In late years some of the railroads have introduced greatly improved passenger equipment to meet the competition of the airplane, the bus, and the private automobile, but on a number of them—save for changes in materials, the introduction of safety devices, and the appearance of various gadgets of which the passenger is hardly conscious—the same type of passenger equipment that was used in the 1880's is still in service.

# Events At Johns Hopkins

***Christmas step-sing and assembly are scheduled (see Music)***

***Dr. Eisenhower speaks on education problems (see Television)***

***Basketball team plans nineteen games (see Varsity Sports)***

## HOLIDAYS

THANKSGIVING—The HOMEWOOD SCHOOLS, including MCCOY COLLEGE, will recess for the holiday from Thursday, Nov. 28 through Sunday, Dec. 1. The SCHOOL OF ADVANCED INTERNATIONAL STUDIES, the SCHOOL OF MEDICINE, and the SCHOOL OF HYGIENE AND PUBLIC HEALTH will suspend classes on Thursday, Nov. 28.

CHRISTMAS—December 25 falls on Wednesday this year. The HOMEWOOD SCHOOLS, including MCCOY COLLEGE, will suspend classes from Monday, Dec. 23 until Monday, Jan. 5. The SCHOOL OF MEDICINE and the SCHOOL OF HYGIENE AND PUBLIC HEALTH will suspend classes from Saturday, Dec. 21 until Thursday, Jan. 2 at 9 a.m.

## MUSIC

CHRISTMAS CONCERT—The Johns Hopkins Glee Club and Orchestra will be joined by the Goucher College Glee Club in a concert of sacred music appropriate to the Christmas season; open to the public without charge (Sunday, Dec. 8 at 8:30 p.m. in Shriver Hall).

CHRISTMAS STEP-SING—The Glee Club, in one of the pleasantest of Johns Hopkins traditions, will sing carols under the stars. The University's Christmas tree and the tower of Gilman Hall will be specially lighted for the occasion. Admission free. (Wednesday, Dec. 18 on the steps of Gilman Hall at 8 p.m.)

CHRISTMAS ASSEMBLY—Season's greetings from the Glee Club, the Orchestra, and others in a program that is always among the year's most popular; open to the public without charge (Friday, Dec. 20, at 10 a.m. in Shriver Hall).

## TELEVISION

JOHNS HOPKINS FILE 7—The University's television program, dealing with all areas of the arts and sciences, may be seen regularly across the country on stations of the American Broadcasting Company network. SUNDAY, NOV. 24,* "The Iron Curtain" with Paul Linebarger, professor of Asiatic politics at the School of Advanced International Studies; SUNDAY, DEC. 1,* "Tomorrow's Chemists" with Donald H. Andrews, professor of chemistry; SUNDAY, DECEMBER 8,* "Education 1970" with Milton S. Eisenhower, president of the Johns Hopkins University, who

will discuss the problems to be faced in education during the next twelve years and ways in which these problems might be solved; SUNDAY, DEC. 15,* "Campus Christmas" with the Johns Hopkins Glee Club; SUNDAY, DECEMBER 22,* "Blowing Glass for Science" with John Lehman, master glass blower, who will demonstrate the preparation of precision instruments for use in scientific research; SUNDAY, DECEMBER 29,* "Radio Window" a discussion of the advances made by using the radio telescope for astronomy.

* In New York City and Detroit, program will be seen on the preceding Saturday.

## CONFERENCE

THE CURRENT SITUATION IN LATIN AMERICA—A foreign affairs conference for corporation executives sponsored by the Johns Hopkins School of Advanced International Studies and its affiliated Foreign Service Educational Foundation will be devoted to a review of trends and events in Latin America of importance to the U.S. foreign trade community. The conferences are off-the-record sessions for business executives, labor leaders, and government officials. (Wednesday and Thursday, Dec. 11 and 12, at the Statler Hotel in Washington, D.C.; information and reservations from the School of Advanced International Studies, 1906 Florida Avenue, N.W., Washington 9, D.C.; telephone ADams 4-2940.)

## EXHIBITION

RARE COINS—The first public showing of the extensive Greek holdings of the Johns Hopkins numismatic collection, open to the public without charge (through January 12, from 2 to 5 p.m. at Evergreen House, 4545 N. Charles Street; closed Saturdays and Sundays).

## ALUMNI MEETINGS

PITTSBURGH—The annual luncheon for Pittsburgh students and prospective students will be held on Monday, Dec. 30. (Details will be announced.)

CINCINNATI—The annual oyster feast of the Ohio Valley Alumni Association will be held on Friday, Nov. 22. The guest of honor will be Donald H. Andrews, professor of chemistry (8 p.m. at the University Club in Cincinnati).

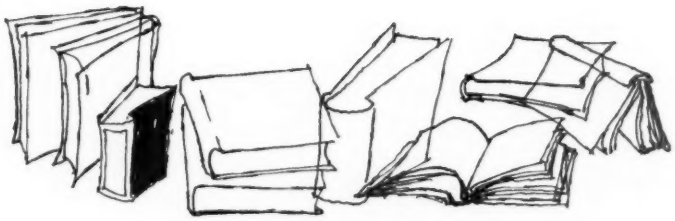
## VARSITY SPORTS

NOTE—No admission fee is charged for Johns Hopkins home athletic events, but an admission card is required. Persons who wish to attend games during the current university year may obtain a card without charge by sending a stamped, self-addressed envelope to the Department of Physical Education, the Johns Hopkins University, Baltimore 18, Md. Alumni of the University should address their requests for admission cards to the Alumni Relations Office, the Johns Hopkins University, Baltimore 18, Md.

BASKETBALL—The season opens this month. Johns Hopkins VS. SWARTHMORE on Saturday, Dec. 7 (away); WESTERN MARYLAND on Tuesday, Dec. 10 (away); TOWSON TEACHERS on Thursday, Dec. 12 (away); HAVERFORD on Saturday, Dec. 14 (Homewood Gymnasium at 8:30 p.m.); DELAWARE on Tuesday, Dec. 17 (away); GETTYSBURG on Thursday, Jan. 9 (Homewood Gymnasium at 8:30 p.m.); FRANKLIN AND MARSHALL on Saturday, Jan. 11 (away); CATHOLIC on Wednesday, Jan. 15 (Homewood Gymnasium at 8:30 p.m.); WASHINGTON on Saturday, Jan. 17 (Homewood Gymnasium at 8:30 p.m.); DICKINSON on Saturday, Feb. 1 (Homewood Gymnasium at 8:30 p.m.); RUTGERS on Wednesday, Feb. 5 (Homewood Gymnasium at 8:30 p.m.); MASSACHUSETTS INSTITUTE OF TECHNOLOGY on Friday, Feb. 7 (Homewood Gymnasium at 8:30 p.m.); TOWSON TEACHERS on Saturday, Feb. 8 (Homewood Gymnasium at 8:30 p.m.); LOYOLA on Wednesday, Feb. 12 (away); WESTERN MARYLAND on Saturday, Feb. 15 (Homewood Gymnasium at 8:30 p.m.); LOYOLA on Tuesday, Feb. 18 (Homewood Gymnasium at 8:30 p.m.); HAMPDEN-SYDNEY on Friday, Feb. 21 (away); RANDOLPH-MACON on Saturday, Feb. 22 (away); URSINUS on Wednesday, Feb. 26 (Homewood Gymnasium at 8:30).

The Johns Hopkins Magazine
Homewood, Baltimore 18, Md.

Return Postage Guaranteed



THE great glory of America's privately supported colleges and universities lies in their independence. It is independence which enables them to serve all men, not merely a few; which assures us of research and learning free from bias and directed toward a single goal: the discovery of truth and knowledge, made available to all. This is truly free enterprise in education. It is through such enterprise that our civilization has its best hopes for survival and advance.

How can we be sure that American education *stays* free? By providing the support, in dollars, which insures that our schools need become beholden to no one agency or group; support which is the firm foundation on which education can continue to stand free.

JACOB L. HAIN
*Investment Adviser*
Fifth and Penn Streets
Reading, Pennsylvania
TELEPHONE: *Reading 4-8388*